

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

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PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing
(day/month/year) **07 APRIL 2006 (07.04.2006)**

Applicant's or agent's file reference
LC05PCT042

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/KR2005/004439

International filing date (day/month/year)

22 DECEMBER 2005 (22.12.2005)

Priority date(day/month/year)

04 JULY 2005 (04.07.2005)

International Patent Classification (IPC) or both national classification and IPC

C08F 293/00(2006.01)i

Applicant

LG CHEM, LTD. et al

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/KR



Korean Intellectual Property Office
920 Dunsan-dong, Seo-gu, Daejeon
302-701, Republic of Korea

Facsimile No. 82-42-472-7140

Date of completion of this opinion

05 APRIL 2006 (05.04.2006)

Authorized officer

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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/KR2005/004439

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

- ☐ a sequence listing
☐ table(s) related to the sequence listing

b. format of material

- ☐ on paper
☐ in electronic form

c. time of filing/furnishing

- ☐ contained in the international application as filed.
☐ filed together with the international application in electronic form.
☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

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**WRITTEN OPINION OF THE
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International application No.
PCT/KR2005/004439

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-18	YES
	Claims	NONE	NO
Inventive step (IS)	Claims	11-14, 16-18	YES
	Claims	1-10, 15	NO
Industrial applicability (IA)	Claims	1-18	YES
	Claims	NONE	NO

2. Citations and explanations :

Reference is made to the following documents:

D1: KR 1999-80695 A

D2: US 6160084 A

1. Novelty

Claims 1-6, 10 of the present invention relate to a block copolymer of monomers represented by formula (1) and (2). Claims 7-9, 15 relate to a method of preparing said block copolymer using a specific strain. Claims 11-14 relate to a short-chain-length PHA synthetic gene of a *Pseudomonas* sp. HJ-2 strain. Claims 16-18 relate to a variety of usages of said block copolymer. The above subject matters are not disclosed in D1 and D2. Thus the above claims are considered novel under PCT Article 33(2).

2. Inventive Step

The block copolymer of claim 1 comprises 3-hydroxybutyrate of formula 1 and 3-hydroxyvalerate of formula 2, which are the same as formula 1 and formula 2 of claim 5 of D1. Thus a person skilled in the art is considered to easily invent the present copolymer only by differentiating the amount of the composing monomers from D1. Accordingly claim 1 is not inventive under PCT Article 33(3). Though claims 2-6 define the technical feature of claim 1 in greater detail, the definition is not remarkable. Thus claims 2-6 are not inventive.

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of:

Claims 7-9, 15 relate to a method of preparing said block copolymer using *Pseudomonas* sp. HJ-2 strain, which can be easily performed by a person skilled in the art from the invention of claims 1-4 of D1. Thus claims 7-9,15 are not inventive.

3. Industrial Applicability

The present invention is industrially applicable under PCT Article 33(4).

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